REMARKS

Claims 1-4, 6, 8-9, 11, 15-16 and 20 are pending in this application. By this Amendment, claims 1, 3-4, 6, 9, 11 and 16 are amended and claims 5, 10, 12-14, 18-19 and 21 are canceled without prejudice or disclaimer. Various amendments are made for clarity and are unrelated to issues of patentability.

Entry of the amendments is proper under 37 C.F.R. §1.116 because the amendments: (1) place the application in condition for allowance; (2) do not raise any new issues requiring further search and/or consideration; and/or (3) place the application in better form for appeal, should an appeal be necessary. More specifically, independent claims 1 and 6 are amended to include features of dependent claims 5 and 10, respectively. Further, independent claims 11 and 16 are amended to include features of dependent claims 12-14 and 18-19, respectively. Independent claims 1, 3-4, 6 and 9 are also amended based on the objections raised in the outstanding Office Action. Thus, no new issues are raised. Entry is thus proper under 37 C.F.R. §1.116.

The Office Action rejects claims 1-3, 5-6, 8-13, 15-16 and 18-21 under 35 U.S.C. §102(e) over U.S. Patent 6,804,246 to Petersen et al. (hereafter Petersen). The Office Action also rejects claims 4 and 14 under 35 U.S.C. §103(a) over Petersen in view of U.S. Patent 6,628,641 to Strawczynski. The rejections are respectfully traversed with respect to the pending claims.

The attached Appendix includes FIGs. 1-2 to help explain differences between the present application and Petersen. FIG. 1 illustrates an AAL2' Cell and a AAL2 CPS Packet being inserted into a payload of an AAL' Cell according to Petersen. FIG. 1 (in the Appendix) corresponds to Peterson's FIG. 4. FIG. 2 (in the Appendix) shows structure of an AAL2' Cell

and an internal AAL Packet being multiplexed to a payload of an AAL2' Cell according to the present application. FIG. 2 corresponds to FIGs. 2-4 of the present application.

Generally, a packet length of a vocoded voice may become within 20 bytes. When the packet is transmitted via an ATM Cell payload (48 bytes), the rest of the packet length may becomes useless. Therefore, a standard may be provided for AAL2 Cells.

FIG. 1 shows an AAL2 Cell as one of the standard ATM Cells. The efficiency of a relay line comes to be high by transmitting via relay line such as E1 after multiplexing the AAL2 CPS-packets of multi users to the AAL2 Cell payload as shown in Fig. 1. A CPS-packet may consist of a 3 byte Header of CID, LI, UUI and HEC and Payload (storing User Data). After the AAL2 Cell is transmitted to a base station or a base station controller, the cell may be de-multiplexed and the multi user's CPS-Packet may be separated from the payload of the AAL2 Cell. The separated CPS-Packet may be transmitted to other boards of the base station according to its destination and may be processed in a CPU of the same board.

Petersen and the present application differ on how to change the separated CPS-Packet into a kind of Cell to transmit to other boards. For example, Peterson transmits a separated multi user's CPS-Packet via a payload of the internal AAL2 Prime Cell without changing process. In this technique, the payload of the AAL2' Cell not loading the CPS-Packet may become useless. Therefore, it may not be able to handle a long packet, such as video. On the other hand, in the present application, de-mulitplexed CPS-Packets that have a same destination may be transmitted together to other boards. After separating the payload from the CPS-Packet, the separated payloads may be gathered to the payload of an Internal AAL Packet and

transmitted together. The AAL Packet may include a 3 byte AAL Packet Header, which is attached to the payload of the Internal AAL Packet. Then, the AAL Packet that has the same destination may be multiplexed to the payload of the AAL2' Cell and transmitted to the other board of the base station.

The AAL Packet Header may include fields of LI (Packet data length of payload), C ("1" mans sequential data, "0" means non-sequential data), SWO-NO (Sequence Number of sequential data).

The AAL2' Cell of the present application may be an internal ATM Cell for multiplexing the AAL Packet and may have a different cell structure than Petersen. Differently from the prior AAL2 Cell, the AAL2" Cell may be just used at an inner part. It may include 1 byte of a start of packet (SOP) and the payload. The structure of the SOP may be simpler than the AAL2 Cell.

The methods of the present application and Petersen differ on transmitting an AAL2 CPS-Packet to another board, wherein the AAL2 CPS-Packet is de-mulitiplexed to AAL2 Cell which is transmitted from the relay line. As will be discussed below, the present application contains features (such as in claims) regarding structures of an AAL2' Prime Cell and an AAL Packet and a procedure of transmitting the cell to an inner board.

Independent claim 1 recites an AAL transmitter to generate one or more AAL cells by multiplexing N AAL packets, generated by adding an AAL packet header to an i^{th} data subset of an original user data set, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field to indicate a starting location of an i^{th} AAL packet, the AAL

transmitter residing in a channel card, the channel card further including an AAL receiver and a CPU. Independent claim 1 also recites an AAL receiver to receive the one or more AAL cells generated by the AAL transmitter and to restore the original user data set by demultiplexing the N AAL packets included in the one or more AAL cells, the AAL receiver residing in an AAL2 processor. Still further, independent claim 1 recites an AAL2 transmitter to receive the restored original user data set from the AAL receiver and to generate one or more of the AAL2 cells by multiplexing M common part sublayer (CPS) packets, generated by adding a CPS packet header to a j^{th} data subset of the restored original user data set, the AAL2 transmitter residing in the AAL2 processor, wherein i, j, N, and M are positive integers, $1 \leq i \leq N$, and $1 \leq j \leq M$.

The applied references do not teach or suggest at least these features of independent claim 1, which includes features of dependent claim 5. More specifically, the Office Action (on page 2) appears to reference Petersen's TX/RX 42-35 as corresponding to the claimed AAL transmitter and to reference Petersen's FIG. 6B as showing a combined AAL2' cell. However, Petersen does not teach or suggest an AAL transmitter to generate one or more AAL cells by multiplexing N AAL packets, generated by adding an AAL packet header to an i^{th} data subset of an original user data set, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field to indicate a starting location of an i^{th} AAL packet. As shown in FIG. 7A, Petersen's TX/RX 42-35 provides a AAL2' signal. Further, as disclosed in col. 3, lines 8-9 in a first mode of the AAL2' protocol, only one AAL2 packet is carried for an ATM cell payload , such as shown in FIG. 6A On the other hand, in a second mode (FIG. 6B), the payload may contain more than one AAL2 packet. However, Petersen is very clear that the payload does not

include a start field. Thus, Petersen does not teach or suggest that each of the one or more AAL cells includes an ATM header and a Start of Packet field to indicate a starting location of an i^{th} AAL packet. The Office Action also cites Petersen's FIG. 3A when discussing features of dependent claim 5. However, Petersen's FIG. 3 shows that plural AAL2 packets are inserted into a standard ATM cell. Petersen's FIG. 3 clearly differs from the specific features cited within Petersen (and/or FIG. 6B).

Petersen's TX/RX 42-35 also does not generate one or more AAL cells by multiplexing N AAL packets. Furthermore, Petersen's TX/RX 42-35 does not teach or suggest an AAL transmitter to generate one or more AAL cells (generated by adding an AAL packet header to an i^{th} data subset of an original user data set).

For at least the reasons set forth above, Petersen does not teach or suggest the claimed AAL transmitter to generate one or more AAL cells by multiplexing N AAL packets as well as each of the one or more AAL cells includes an ATM header and a Start of Packet field to indicate a starting location of an i^{th} AAL packet.

Petersen also does not teach or suggest an AAL receiver to receive the one or more AAL cells generated by the AAL transmitter and to restore the original user data set by demultiplexing the N AAL packets included in the one or more AAL cells. The Office Action (on page 3) cites Petersen's CHU 42-32 as corresponding to the claimed AAL receiver. However, Petersen's CHU 42-32 does not teach or suggest an AAL receiver to receive the one or more AAL cells generated by the AAL transmitter and to restore the original user data set by demultiplexing the N AAL

packets included in the one or more AAL cells. Petersen's CHU 42-32 does not demultiplex AAL packets included in an AAL cell. Petersen does not discuss restoring the original user data.

Even further, Petersen does not teach or suggest an AAL2 transmitter to receive the restored original user data set from the AAL receiver and to generate one or more of the AAL2 cells by multiplexing M CPS packets, generated by adding a CPS packet header to a j^{th} data subset of the restored original user data set. The Office Action (on page 3) cites Petersen's CHU 42-32 as corresponding to the claimed AAL2 transmitter. However, Petersen's CHU 42-32 does not teach or suggest an AAL2 transmitter to receive the restored original user data set from the AAL receiver and to generate one or more of the AAL2 cells. Petersen's CHU 42-32 does not multiplex CPS packets. Petersen's CHU 42-32 also does not receive the restored original user data set.

Still further, Petersen does not teach or suggest the claimed features for multiplexing N AAL packets, demultiplexing the N AAL packets and multiplexing M CPS packets (in an apparatus for transmitting). Applicant respectfully notes that Petersen merely discloses that AAL2' channels (each on an individual ATM-VCC) may be multiplexed into one ATM-VCC using the standard AAL2 protocol. Accordingly, Petersen discloses multiplexing of channels. Petersen does not teach or suggest the claimed multiplexing of packets (and/or demultiplexing of packets) as recited in independent claim 1.

For at least the reasons set forth above, Petersen does not teach or suggest all the features of independent claim 1. Strawczynski does not teach or suggest the missing features of independent claim 1. Thus, independent claim 1 defines patentable subject matter.

Independent claim 6 recites an AAL2 receiver to receive one or more of the AAL2 cells, containing common part sublayer (CPS) packets corresponding to an original user data set, and to restore the original user data set by demultiplexing the CPS packets. Independent claim 6 further recites an AAL transmitter to receive the restored original user data set from the AAL2 receiver and to generate one or more AAL cells by multiplexing N AAL packets, generated by adding an AAL packet header to an i^{th} data subset of the restored original user data set, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field to indicate a starting location of an i^{th} AAL packet. Independent claim 6 also recites an AAL receiver to receive the one or more AAL cells from the AAL transmitter and to restore the original user data set by demultiplexing the N AAL packets, the AAL receiver residing in a selector, the selector further including a second AAL transmitter and a CPU.

For at least similar reasons as set forth above, Petersen does not teach or suggest at least these features of independent claim 6. More specifically, Petersen does not teach or suggest an AAL transmitter to receive the restored original user data set from the AAL2 receiver and to generate one or more AAL cells by multiplexing N AAL packets, generated by adding an AAL packet header to an i^{th} data subset of the restored original user data set, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field to indicate a starting location of an i^{th} AAL packet. When discussing features regarding previous dependent claim 10, the Office Action cites Petersen's FIG. 3A and col. 2, lines 27-28 as teaching the claimed ATM header and Start of Packet field. However, Petersen's FIG. 3A does not correspond to the structure of the specific cells/packets that are utilized in the sections of Petersen that are cited in

the Office Action. For example, Petersen's FIG. 6B clearly does not include a start field. See col. 9, lines 55-58. Petersen does not teach an AAL transmitter to receive the restored original user data set from the AAL2 receiver and to generate one or more AAL cells where each of the AAL cells includes an ATM header and a Start of Packet field.

For at least the reasons set forth above, Petersen does not teach or suggest all the features of independent claim 6. Strawczynski does not teach or suggest the missing features. Independent claim 6 therefore defines patentable subject matter.

Independent claim 11 recites generating N AAL packets by adding an AAL packet header to an i^{th} data subset of an original user data set, the AAL packet header including a sequence number of the i^{th} data subset, a routing tag field identifying the original user data set, a length indicator field indicating a length of the i^{th} data subset, and a C-FLAG field indicating whether the i^{th} data subset represents an N^{th} data subset of the original user data. Independent claim 11 also recites generating one or more AAL cells by multiplexing the generated N AAL packets in the AAL transmitter of the channel card, receiving the original user data set at an AAL receiver, and restoring the received original user data set by demultiplexing the N AAL packets included in the AAL cells, the restoring being performed by the AAL receiver residing in an AAL2 processor. Still further, independent claim 11 recites receiving the restored original user data set at an AAL2 transmitter, generating M common part sublayer (CPS) packets by adding a CPS packet header to a j^{th} data subset of the restored original user data set by the AAL2 transmitter residing in the AAL2 processor, generating one or more of the AAL2 cells by multiplexing the

M CPS packets by the AAL2 transmitter residing in the AAL2 processor, and transmitting the AAL2 cells to a receiving system through a connection line.

For at least similar reasons as set forth above, the applied references do not teach or suggest at least these features of independent claim 11. More specifically, Petersen does not teach or suggest generating N AAL packets by adding an AAL packet header to an i^{th} data subset of an original user data set, the AAL packet header including a sequence number of the i^{th} data subset, a routing tag field identifying the original user data set, a length indicator field indicating a length of the i^{th} data subset, and a C-FLAG field indicating whether the i^{th} data subset represents an N^{th} data subset of the original user data set. When discussing dependent claims 12-14, the Office Action cites Petersen's FIG. 3A as teaching the claimed sequence number and the Office Action cites Petersen's FIG. 2 as teaching the claimed routing tag field and length indicator field. However, Petersen's FIG. 3A and FIG. 2 do not correspond to the features provided within the other cited sections of Petersen. Petersen's FIGs. 2 and 3A do not represent the structure of cells/packets disclosed in the other sections of Petersen that are cited in the Office Action. Thus, Petersen does not teach or suggest these features as alleged in the Office Action. The citation to Petersen's FIGs. 2 and 3A is improper.

The Office Action also cites Strawczynski's col. 7, lines 62-65 as teaching the claimed C-FLAG field. However, the cited section merely relates to a PTI to indicate a last cell of a frame 650. However, this does not teach or suggest an AAL packet header that includes a C-FLAG field indicating whether the i^{th} data subset represents an N^{th} data subset of the original user data set. Further, there is no suggestion in the prior art to provide this features in Petersen. Stated

differently, there is no suggestion of how Strawczynski can be combined with Petersen so as to find all the features of independent claim 11.

Furthermore, Petersen does not teach or suggest generating one or more AAL cells by multiplexing the generated N AAL packets in the AAL transmitter of a channel card, restoring the received original user data set by demultiplexing the N AAL packets included in the AAL cells, and generating one or more of the AAL2 cells by multiplexing the M CPS packets by the AAL2 transmitter residing in the AAL2 processor. The Office Action's discussion of Petersen on pages 2-3 does not teach or suggest these specific multiplexing, demultiplexing or multiplexing followed by the claimed transmitting the AAL2 cells to a receiving system through a connection line.

For at least the reasons set forth above, Petersen and Strawczynski do not teach or suggest all the features of independent claim 11. Independent claim 11 therefore defines patentable subject matter.

Independent claim 16 recites receiving one or more AAL2 cells containing common part sublayer (CPS) packets corresponding to an original user data set, the receiving being performed in an AAL2 receiver residing in an AAL2 processor, restoring the original user data set by demultiplexing the CPS packets by the receiver in the AAL2 processor, and receiving the restored original user data set at an AAL transmitter. Independent claim 16 also recites generating N AAL packets by adding an AAL packet header to an i^{th} data subset of the restored original user data set, the AAL packet header including a sequence number of the i^{th} data subset, a routing tag field identifying the original user data set, a length indicator field indicating a length

of the i^{th} data subset, and a C-FLAG field indicating whether the i^{th} data subset represents the N^{th} data subset of the restored original user data set, the generating being performed by the AAL transmitter residing in the AAL2 processor. Independent claim 16 also recites generating one or more AAL cells by multiplexing the N AAL packets by the AAL transmitter residing in the AAL2 processor, receiving the one or more AAL cells at an AAL receiver, and restoring the original user data set by demultiplexing the N AAL packets included in the one or more AAL cells, the restoring being performed by the AAL receiver residing in a selector, the selector further including a second AAL transmitter and a CPU.

For at least similar reasons as set forth above, Petersen does not teach or suggest all the features of independent claim 16. More specifically, Petersen does not teach or suggest generating N AAL packets, wherein the AAL packet header includes a sequence number of the i^{th} data subset, a routing tag field identifying the original user data set, a length indicator field indicating the length of the i^{th} data subset, and a C-FLAG field that indicates whether the i^{th} data subset represents the N^{th} data subset of the restored original user data set.

Still further, Petersen does not teach or suggest restoring the original user data set by demultiplexing the CPS packets, generating one or more AAL cells by multiplexing the N AAL packets by the AAL transmitter residing in the AAL2 processor, and restoring the original user data set by demultiplexing the N AAL packets included in the one or more AAL cells. The Office Action's discussion of Petersen on pages 5-6 does not teach or suggest these specific demultiplexing, multiplexing and demultiplexing.

For at least the reasons set forth above, Petersen and Strawczynski do not teach or suggest all the features of independent claim 16. Thus, independent claim 16 defines patentable subject matter.

Accordingly, each of independent claims 1, 6, 11 and 16 defines patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the dependent claims recite features that further and independently distinguish over the applied references.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-4, 6, 8-9, 11, 15-16 and 20 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
KED & ASSOCIATES, LLP

David C. Oren
Registration No. 38,694

Attachment: Appendix A

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3777 DCO/kah
Date: December 10, 2007
Please direct all correspondence to Customer Number 34610